



ROMANIA
MINISTRY OF NATIONAL EDUCATION

UNIVERSITY OF CRAIOVA
FACULTY OF HORTICULTURE

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PACKAGE OF COURSES

Master's degree programme: FOOD SAFETY AND CONSUMER PROTECTION

This is the package of course of master's degree programme of Food Safety and Consumer Protection from the University of Craiova/ the Faculty of Horticulture/The Department of Horticulture and Food Science.

1ST YEAR OF STUDY

QUALITY MANAGEMENT OF FOOD PRODUCTS

CODE: D29CPAM10

CREDITS: 5

COURSE COORDINATOR: PhD. lecturer Maria-Magdalena POENARU

YEAR / SEMESTER: 1st Year / 1st Semester

HOURS PER WEEK: 2 hours of course, 1 hour of seminar

NUMBER OF WEEKS: 14

COURSE TYPE: specialized

COURSE OBJECTIVES:

Knowledge, understanding and appropriation of theoretical and practical notions, useful for the understanding the concepts on the food safety management.

This course is conceived in a formula that combines the theoretical training with a series of applied exercises in order to provide:

- knowledge and understanding of the requirements of the principles of the food safety management and the HACCP principles
- a set of necessary useful to specialists in order to identify the risks throughout food production and distribution, controlling them and improving the quality performance and the food quality of not being harmful.
- the assimilation of the theoretical notions, useful for understanding the concepts of the food safety management
- understanding the requirements of the implementation of the food safety management system;
- knowledge of the risk identification methodology and determination of the critical control points;
- knowing how to approach the process of implementing of the Food Safety Management System

TOPICS:

1. The National and European legislative framework
 - 1.1 Legislative Framework and Standards
 - 1.2 HACCP system - regulations on the use of the HACCP system at national and international level
 - 1.3 The need to define food quality
2. Terms and definitions applicable to the HACCP implementation. Hygiene principles in production units
 - 2.1 Terms and definitions applicable to the implementation of the food safety management system
 - 2.2 Terms and definitions in the field of auditing
 - 2.3 Principles of food hygiene
 - 2.4 Usual practices for achieving hygiene and sanitary requirements in the food industrial establishments
3. The principles and benefits of the food safety management system
 - 3.1 Benefits of the Food Safety Management System
 - 3.2 Presentation of the HACCP principles of action
 - 3.3 Action steps for the application of the HACCP principles according to the "codex alimentarius"
4. Process management
5. Presentation of the SR EN ISO 22000: 2005 standard

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: answers to exam 80%, final answers to seminary works 20%

ASSESSMENT FORM: exam

REFERENCES

1. <http://ec.europa.eu>
2. www.renar.ro
3. www.ansvsa.ro
4. www.european-accreditation.org
5. www.asro.ro

ADVANCED SEPARATION OF CONTAMINANTS FROM FOOD PRODUCTS

CODE: D29CPAM102

CREDITS: 4

COURSE COORDINATOR: PhD.Associate Professor. Ion TRANDAFIR

YEAR / SEMESTER: 1st Year / 1st Semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: specialized

COURSE OBJECTIVES: Approach and understanding of fundamental principles in separating mixtures using unconventional techniques. Analysis of influence factors and interpretation of characteristic quantities for the analysis of a separation process. Understanding the mass transfer phenomena through membranes, ion exchange, and separation with supercritical fluids. Modeling and simulation of separation processes. Use of modern instrumental analysis methods to determine food quality.

TOPICS: Membranes: types, obtaining, mass transfer through membranes, transfer mechanisms. Microfiltration, ultrafiltration, reverse osmosis, separations using ionic fluids and supercritical fluids, molecular distillation, ion exchange, adsorption, dialysis and electro dialysis: principle, techniques, applications, apparatus.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: answers to exam 50%, final answers to Laboratory works 20%, tests 10% and reference 20%.

ASSESSMENT FORM: exam

REFERENCES

1. Banu, C. (coord) - Food sovereignty, security and safety. ASAB Publishing House, Bucharest, 2007.
2. Banu, C (coord) - The Manual of the Food Industry Engineer, vol. I, Technical Publishing House, Bucharest, 1998
3. Banu, C (coord) - Technical and Technological Progressions in Food Industry, vol. I, Technical Publishing House, Bucharest, 1992
4. Banu, C (coord) - Technical and technological progress in the food industry, vol. II, Technical Publishing House, Bucharest, 1993
5. G.M. Costin, Traian Florea, Applications of membrane separation in biotechnology and food industry, Academica Publishing House, Galati, 2013
6. Dima, R., Pleșu, V., Gâjju, C.L., Membrane separation engineering, Bren Publishing House, Bucharest, 1999.

COMMUNITY LEGISLATION ON FOOD SAFETY

CODE: D29CPAM103

CREDITS: 4

COURSE COORDINATOR: prof.univ.dr.ing.Fanel IACOBESCU

YEAR / SEMESTER: 1st Year / 1st Semester

HOURS PER WEEK: 2 hours of course, 1 hour of seminar

NUMBER OF WEEKS: 14

COURSE TYPE: specialized

COURSE OBJECTIVES:

- Understanding food risk. Control of food quality. Food Expertise.

- Assimilation of techniques and methods of analysis used to detect the falsification of food products of animal and non-animal origin
- Understanding the HACCP principles according to „Codex Alimentarius”

TOPICS:

1. Food Safety Strategy in Romania and the European Union.
2. The Community Acquis in the field of food safety.
3. Principles and general requirements of food legislation. Procedures in the field of food safety established by the European Authority for Food Safety.
4. Competencies and responsibilities of authorities with responsibilities in the field of food safety in Romania.
5. Legislation in the field of food safety and its correlation with the EU Directives Standards - volunteering and obligation, tools for the implementation of the food safety management.
6. The HACCP system on national and international level.
7. Provisions regarding the use of HACCP method at national level.
8. Provisions regarding the use of HACCP method at international level.

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: answers to exam 80%, final answers to seminary works 20%

ASSESSMENT FORM: exam

REFERENCES

1. FAO/WHO, Criteria for evaluating acceptable methods of analysis for Codex purposes, CX/MAS 95/3;
2. www.codexalimentarius.net
3. www.praxiom.com

FOOD SAFETY

CODE: D29CPAM104

CREDITS: 8

COURSE COORDINATOR: PhD Professor Violeta NOUR

YEAR/ SEMESTER: 1st Year / 1st Semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: speciality

COURSE OBJECTIVES: Knowledge of the physico-chemical and biochemical risks encountered along the food chain and of the European Directives on chemical criteria for food contaminants and food additives. The use of modern instrumental methods of chemical analysis for the determination of food quality

THEMES: Food security, food sovereignty and food safety; Food supplementation; Toxic substances that occur naturally in foods; Nitrates and nitrites in food; Toxic products which are formed in the processes of food storage and processing; Contamination of foodstuffs with toxin-producing molds; Contamination of foods with heavy metals; Contamination of foodstuffs with pesticides; Contaminants from industrial activity; Residues of veterinary medicines in food; Use of additives in the food industry; Genetically modified organisms (GMOs) and food safety; Substances that can migrate from plastic packaging to food

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: answers to exam 50%, activity at Laboratory works 20%, regulat testing 20%; essay 10%

ASSESSMENT FORM: exam

REFERENCES

- Banu, C. (coord) Suveranitate, securitate și siguranță alimentară. Editura ASAB, București, 2007.
 Banu, C. (coord) Aditivi și ingrediente pentru industria alimentară. Editura Tehnică, București, 2000.
 Banu C., Nour V., Vizireanu C., Musteață G., Răsmeriță D., Rubțov S. Calitatea și controlul calității produselor alimentare. Ed. AGIR, București, 2002.

FOOD TRACEABILITY

CODE: D29CPAM205

CREDITS: 8

COURSE COORDINATOR: PhD Professor Violeta NOUR

YEAR / SEMESTER: 1st Year / 2nd semester

HOURS PER WEEK: 2 hours of course, 1 hour of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: domain

COURSE OBJECTIVES: Knowledge of traceability requirements, utility, types and characteristics of traceability systems; Knowledge of the components of the internal traceability system; Implementation of traceability systems

THEMES: Traceability of food products (concept, principles, requirements, utility); Characteristics of traceability systems; Types of traceability systems within a food production chain; Components of the internal traceability system; Stages in introducing traceability systems; Traceability of analytical measurements; Implementation of traceability systems

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: answers to exam 60 %, seminar activity 20%, regular testing 20%

ASSESSMENT FORM: exam

REFERENCES

Nour V. Trasabilitatea produselor alimentare. Editura Universitaria, Craiova, 2016.

Banu, C. (coord) Suveranitate, securitate și siguranță alimentară. Editura ASAB, București, 2007.

MICROBIOLOGICAL CONTROL OF FOODSTUFFS

CODE: D29CPAM206

CREDITS: 7

COURSE COORDINATOR: Associate prof. Tuțulescu Felicia

YEAR / SEMESTER: 1nd year / 2nd semester

HOURS PER WEEK: 2 hours of course, 2 hour laboratory

NUMBER OF WEEKS: 14

COURSE TYPE: fundamental

COURSE OBJECTIVES: Knowledge of the European Union's regulations concerning the microbiological norms which are enforced for the most important groups of foods. Modifications of a microbiological nature that might be suffered by the foods

TOPICS: Knowledge of the means and procedures through which the microbial loading of the main agricultural and alimentary products could be evaluated. Explanation of the potential risks to which the population could be submitted due to the consumption of some alimentary products which might have suffered unwanted modifications of a microbiological nature. Knowledge of the role held by the specialist within the alimentary industry in what does concern the survey upon the alimentary products' processing and the ensurance of the alimentary safety.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: answers to exam 85%, final responses sustained upon practical works performed in laboratory: 15%.

ASSESSMENT FORM: exam

REFERENCES

Dan Valentina, 2001, *Microbiologia alimentelor*, Ed. Alma, Galați

Dragomir Felicia, 2006, *Microbiologia alimentelor*, vol I, Ed. Universitaria, Craiova

Segal B., Dan Valentina, Rodica Segal, V. Teodoru, 1985, *Determinarea calității produselor alimentare*, Ed. Ceres, București

Tofan, C., Bahrim, G., Nicolau, A., Zara, M. - *Microbiologia produselor alimentare. Tehnici și analize de laborator*. Editura AGIR, București, 1993

Regulamentul CE 1441/2007 al Comisiei din 5 dec. 2007 de modificare a Regulamentului nr. 2073/2005 privind criteriile microbiologice ale produselor alimentare

ANALYSIS OF CRITICAL RISKS AND POINTS IN THE FOOD INDUSTRY

CODE: D29CPAM207

CREDITS: 8

COURSE HOLDER: Senior Lecturer, PhD, Ileana COJOCARU

YEAR/SEMESTER: 1st year/ 1st semester

NUMBER OF HOURS PER WEEK: 2 hours course, 1 hours practical course

NUMBER OF WEEKS: 14

COURSE TYPE: main subject

COURSE OBJECTIVES:

- Familiarization with the food quality notice;
- Understanding the need for analyzes of food products;
- Knowledge of knowledge necessary for analysis of food products;

THEMES: Organization and importance of quality technical control in the food industry and quality control of food products of vegetable origin. Food quality. Keeping the nutritional value of food. Sensory and presentation qualities of food. Rapid and objective assessment of risk in the food chain. The Importance of HACCP for Global Food Quality. The objectives of the specialized sanitary inspection and of the managerial self-control. The traceability of the food with reference to the quality and safety parameters.

LANGUAGE OF INSTRUCTION: Romanian

KNOWLEDGE ASSESSMENT: exam answers 70%, final answers for workshops 10%, periodical assessment through practical tests 10%, continuous assessment throughout semester 5%, activities such as homework/ essays/ papers/ translations/ projects 5%.

ASSESSMENT TYPE: exam

BIBLIOGRAPHY:

1. Argher D.L.; 1990; The need for Flexibility in HACCP, Food Technology,
2. Beumer R.R si col.; 1994; Application of HACCP in airline catering, Food Control
3. Clucas I.J., Ward, A.R.; 1996, Post-Harvest Fisheries Development: A Guide to Handling, Preservation, Processing and Quality, Natural Resources Institute; Chatham; U.K.
4. Corlett D.A.; 1991; Regulatory verification of HACCP systems, Food Tehnology,
5. Corlett D.A.; 1991; Initiating HACCP in your food company by establishing accountabilities, goals and a project plan. Din cartea: A practical Application of HACCP, Corlett Food Consulting Services.
6. Dean D.H.; 1990; HACCP and Food Safety in Canada, Food Tehnology

NEW APPROACHES TO THE FOOD PACKAGING AND LABELING

CODE: D29CPAM208

CREDITS: 7

COURSE COORDINATOR: PhD. Associate Professor. Mira Elena IONICĂ

YEAR / SEMESTER: 1st Year / IInd Semester

HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

COURSE TYPE: mandatory

COURSE OBJECTIVES: •

Learning by participants of the latest methods of food packaging and labeling.

Learning of the newest methods of food packaging and labeling according to the European requirements and standard. Learning of packaging and labeling requirements for organic food according to European Union regulations and standards.

TOPICS:

Food packaging, introductory notions. Terminology.

Types of packaging used in the food industry. Packaging functions.

Principles of design and packaging aesthetics

Factors influencing the quality of packaged products

The types of packaging used. Auxiliary materials used for packaging.

Criteria and packing standards

Packaging methods. Packing food in vacuum. Food packaging in modified atmosphere.

Food labeling.

Criteria and standards for the packaging and labeling of organic food

TEACHING LANGUAGE : Romanian

KNOWLEDGE ASSESSMENT: answers to exam 70%, final answers to laboratory works 30%

ASSESSMENT FORM: exam

REFERENCES:

1. Maria Turtoi, 2004, Tehnici de ambalare a produselor alimentare, Editura Academica, Galați
2. Maria Turtoi, 2006, Ambalaje și tehnici de ambalare, Îndrumar de lucrări practice și aplicative, Editura Academică, Galați
3. Ionică Mira Elena, 2014, Metode de analiză și control al calității fructelor și legumelor proaspete și divers prelucrate, Editura Universitaria, Craiova.

2ST YEAR OF STUDY

MODERN TECHNIQUES AND METHODS OF MICROBIOLOGICAL ANALYSIS

CODE: D29CPAM309

CREDITS: 7

COURSE COORDINATOR: Associate prof. Tuțulescu Felicia

YEAR / SEMESTER: 1nd year / 1nd semester

HOURS PER WEEK: 2 hours of course, 2 hour laboratory

NUMBER OF WEEKS: 14

COURSE TYPE: Obligatory

COURSE OBJECTIVES: Microbiological quality assessment of foods by using multitest microorganism systems

THEMES: Qualitative assessment techniques for the selective highlighting of indicator micro-organisms by tests attesting their presence or absence in foods. Quantitative assessment techniques to determine the microbial load to be reflect total micro-flora or specific micro-organism groups. Techniques for the isolation and characterization of microorganisms from the non-specific microbiota In particular for the detection of pathogenic, toxicogenic or altering potential

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: answers to exam 85%, final responses sustained upon practical works performed in laboratory: 15%.

ASSESSMENT FORM: exam

REFERENCES

Felicia Dragomir - *Microbiologia alimentelor*. Ed. Universitaria, Craiova, 2006

Tofan C., Bahrim G., Nicolau A ., Zara M. - *Microbiologia produselor alimentare. Tehnici și analize de laborator*. Editura AGIR, București, 1993.

ANALYSIS AND CONTROL METHODS IN THE FOOD INDUSTRY

CODE: D29CPAM310

NUMBER OF CREDITS: 8

COURSE COORDINATOR: Associate Professor PhD MUNTEAN CAMELIA

YEAR OF STUDIES AND SEMESTER: year II/ semester I

NUMBER OF HOURS PER WEEK: Course – 2 hours/ Practical work – 2 hours

NUMBER OF WEEKS: 14

TYPE OF DISCIPLINE: Specialized and obligatory discipline

COURSE OBJECTIVES:

- Deepening knowledge of control and expertise techniques applied in the main branches of the fermenting food industry;
- Participants' acquisition of methods of controlling foodstuffs and combating their falsification and fraud patterns;

CONTENTS:

- Improving practical skills in the quantification, analysis and interpretation of experimental data applied in chemical determinations specific to the food industry;
- Specifying ways to diversify production in line with internal and external consumer claims.

LANGUAGE OF INSTRUCTION: Romanian

KNOWLEDGE ASSESSMENT: examination 70%, practical workshops 30%

FORM OF ASSESSMENT: Examination

REFERENCES:

1. Banu C., 1999 - Manualul inginerului de industrie alimentară. *Editura Tehnică, București*.
2. Banu C. și colab., 2000 – Tratat de știința și tehnologia malțului și a berii. *Editura Agir, București*
3. Banu C. și colab., 2002 – Calitatea și controlul calității produselor alimentare. *Editura Agir, București*
4. Gheorghiuță M., Camelia Muntean, Constantin Băducă Cîmpeanu, 2002 - Oenologie 2 , *Ed.Sitech, Craiova*
5. Gheorghiuță M., Camelia Muntean, Băducă C., Giugea N., 2006 - "Oenologie 1", Editura Sitech, Craiova,
6. Iosif Gh. N și colab, 2002 – Analiza calității produselor, *Editura Tribună economică, București*
7. Muntean Camelia, Băducă C., Stoica Felicia, 2002 - Tehnologii, procedee și metode de analiză și control în industria vinicolă. *Editura Sitech, Craiova*
8. Pomohaci N. și colab., 2002 – Țuica și rachiurile naturale. *Editura Ceres, București*
9. Stoica Felicia, 2007 – Tehnologii generale în industria alimentară fermentativă. *Editura Sitech, Craiova*
10. Stoica Felicia, 2012 – Tehnologii generale în industria alimentară. Procese tehnologice și metode de analiză, Editura Sitech, Craiova.

IGIENIZATION OF FOOD INDUSTRY UNITS IN ACCORDANCE WITH EU NORMATIVES

CODE: D29CPAM311

NUMBER OF CREDITS: 7

COURSE COORDINATOR: *prof. dr. Ion MITREA*

YEAR OF STUDIES AND SEMESTER: *anul II/ sem. I*

NUMBER OF HOURS PER WEEK: *Curs – 2 ore/ Laborator – 1 ora*

NUMBER OF WEEKS: *14*

TYPE OF DISCIPLINE: fundamental discipline

COURSE OBJECTIVES: Deepening the knowledge about modern methods for control of diseases and pests of agro-food products, stored according to the norms applied in the European Union, Training of practical skills in the field of phytosanitary control in mills and bakery factories, Practical training on the hygiene and disinfection of units in the food industry in accordance with EU regulations.

COURSE CONTENTS: The economic significance and consequences of the pest infestation of agri-food products stored, Conditioning the optimal conservation of agri-food products and favoring factors for the development, multiplication of animal pests during storage, Factors that can influence the quality of food during storage, Detecting pests and determining the intensity of the attack, Determination of pest infestation of agro-food products. Control of stored food, The main animal pests of stored agri-food products, Controlling harmful organisms from food storage facilities in line with EU food safety standards, Storage facilities Control of infestation, Controlling pests in mills and bakery plants, Sanitizing, Disinfection, Pest control, The peculiarities of sanitation according to the company profile, Hygienic processing of sugar beet processing plants; Processing of vegetable, milling and bakery oils, preservation of fruits and vegetables, brewing and tobacco processing, National and Community legislation applied to agri-food products in line with EU food safety standards.

LANGUAGE OF INSTRUCTION: Romanian

KNOWLEDGE ASSESSMENT: răspunsurile la examen 70 %, răspunsurile finale la lucrările practice de laborator 30 %

FORM OF ASSESSMENT: Exam

REFERENCES:

B. Bobîrnac, I. Mitrea, 1998 - *Dăunătorii produselor vegetale depozitate și combaterea lor integrată*, ISBN: 973-98-533-2-3, S.C. ANOTIMP S.R.L., Slatina.

M. Busuioc, 2002 – *Dăunătorii produselor agricole depozitate și combaterea lor integrată*. Editura Tacis Fdmol, Chișinău – Moldova.

I. Mitrea, 2005, *Entomologie agricolă*, Editura Universitaria Craiova.

Mitrea, I., 2006 – *Dăunătorii produselor alimentare depozitate*, Editura Universitaria, Craiova. I.

Mitrea, 2013, *Igenizarea unităților de industrie alimentară conform normativelor U.E.*, , Editura Universitaria Craiova.

I. Rosca, I. Oltean, I. Mitrea, și colab. 2011, *Tratat de Entomologie Generala si Speciala*, Editura Alpha MDN Buzău.

*** Acte normative naționale și comunitare: legi, ordonante, hatarari si ordine emise de Parlament, Guvern si Ministerele de specialitate, OEPP.

CONTROL OF FRAUDE OF FOOD PRODUCTS

CODE: D29CPAM312

NUMBER OF CREDITS: 8

COURSE COORDINATOR: Lect. PhD STOICA FELICIA

YEAR OF STUDIES AND SEMESTER: year II/ semester I

NUMBER OF HOURS PER WEEK: Course – 2 hours/ Practical work – 2 hours

NUMBER OF WEEKS: 14

TYPE OF DISCIPLINE: Specialized and obligatory discipline

COURSE OBJECTIVES:

- Knowledge and understanding of general technologies for obtaining different types of foods
- Knowledge of the main food subject to fraud
- Knowledge of European legislation on counterfeiting in the food industry

CONTENTS:

- Explaining and interpreting the concept of food quality and fraud in the food industry
- Determination of counterfeits in the wine, beer and spirits industry
- Determination of counterfeits in the dairy and dairy industry
- Determination of counterfeits in the meat and meat products industry

LANGUAGE OF INSTRUCTION: Romanian

KNOWLEDGE ASSESSMENT: examination 70%, practical workshops 30%

FORM OF ASSESSMENT: examination

REFERENCES:

1. Banu C. și colab., 2013- *Industria alimentară între adevăr și fraudă*, Editura Agir, București
2. Gheorghiu M. și colab, 2002 – *Oenologie 2*, Editura Sitech, Craiova
3. Pomohaci N. și colab., 2002 – *Țuica și rachiurile naturale*, Editura Ceres, București
4. Razuvaev N. I., 1980 – *Prelucrarea complexă a produselor secundare de la vinificație*, Editura Ceres, București
5. Stănciulescu GH., 1973 – *Fabricarea băuturilor alcoolice naturale*, Editura Tehnică, București
6. Stoica Felicia, 2006 – *Tehnologii generale în industria alimentară fermentativă. Ghid de lucrări practice*, Editura Sitech, Craiova
7. Stoica Felicia, 2007 – *Tehnologii generale în industria alimentară fermentativă*, Editura Sitech, Craiova
8. Stoica Felicia, 2012 – *Tehnologii generale în industria alimentară. Procese tehnologice și metode de analiză*, Editura Sitech, Craiova
9. Stoica Felicia, 2008 – *Vinuri aromate și semiaromate în podgoria Drăgășani. Tradiție, tehnologie și perspective*, Editura Universitaria, Craiova
10. Stoica Felicia, 2016 – *Derivate și subproduse în industria vinicolă, Tehnologie, valorificare și metode de analiză*, Editura Sitech, Craiova